Origins^{59}

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The Journal of **The Biblical Creation Society**

Origins^{59}

Guest Editorial:

I am writing this at the time of the launch of the notorious Hollywood film, *Noah*. I find this event symbolic of the battle we are in both as Christians and specifically as creationists. The disturbing feature is the reaction of evangelical leaders. Some share my reaction to the film (I don't comment on its quality as a film but on its content). Others see this as a great epic which can be used in evangelism. That echoes in my mind as an argument used by theistic evolutionists. Some of the latter have argued that by reinterpreting Scripture to fit with accepted scientific beliefs, we can win the unconverted.

But these sorts of arguments miss the fundamental issues. There are two basic dangers with this film. The first is that it flatly contradicts the Word of God at a number of points. This is the error of Genesis 3, is it not? That is a serious thing. It is often excused by arguments of "literary licence". In the past, Bible epic films have introduced features to aid the flow of the film, but not necessarily in contradiction of the Scripture. This film is a perversion of Scripture. There are warnings in Deuteronomy and Revelations about such things. Admittedly they refer to specific aspects of His Word, but clearly the principle is applicable to the whole of His Word.

Secondly, most folk today know next to nothing about what the Bible says. So, they are hearing that this is a Bible epic and will think that this terrible film is what the Bible says. Who will correct them? Yes, we may speak to the odd person here and there to correct the view, but what about the hundreds of thousands (millions?) we don't meet?

As I look back over several decades of creation ministry, I see several developments. BCS may not be the best known creation group, but it has been faithful in serving the British churches – and, indeed, in reaching out to other countries. When I was the Travelling Secretary of the organisation, one of my first overseas missions was to Poland. I was invited to go there as the former communist regime collapsed. Last year I had an unexpected – but much appreciated – letter from Poland in which the folk there wanted to thank me for being the first to take the creation message to that country. They have formed their own creation group and other UK creationists have taken up where I had to leave off. That was an opportunity created by BCS.

Even more fundamental was the name of our organisation: *Biblical Creation Society*, though some folk found it difficult to remember that the "B" did not stand for "British"! This was a very significant step because other groups around the world took the scientific argument as their primary basis. We led where others have followed. Again, arising from this is the "Creation Manifesto" which we wrote and published (it is accessible on the web site). We were a major group for supplying speakers and running conferences for many years. Much of our work was done by volunteers.

One particular feature that I have noticed is how the opposition in the world and the church (!) has increased. This is, of course, an indication of our success in reaching out with the biblical message and is encouraging. The discouraging factor is the opposition within the evangelical community. This is basically an abandonment of those principles of Scriptural interpretation which have been a foundation of evangelicalism down the centuries and as outlined clearly in the BCS Manifesto.

Our foundation is ultimately Scripture. One of my fond memories as a young man was hearing and reading Francis Schaeffer. As he tried to instil in us, creation (and many of its ethical outcomes) is a part of a whole biblical story. It is fully integrated with the whole of Scripture. If we abandon it, we might as well abandon Scripture.

We need to see this more clearly today. I sometimes use the diagram pictured in this editorial.

I avoid the use of "perfect" for the original creation – preferring to keep that for the future creation. Instead, I talk about "Created harmony". It was very good, but it was at the beginning of the road to glory.

Genesis 1-2 describe the "created harmony" which the Lord described as "very good". Much of our creation ministry concentrates on this, especially the wonderful design we are still discovering in our world. This is right and is to be encouraged. I recall one visit I had to Argentina in my ministry. I was interviewed on a programme on the radio (similar to our "Today" programme on Radio 4). I was encouraged to describe my ministry and purpose. The interviewer actually got quite excited! In the end he said, "But John, this is not the world as we see it today, is it? What has gone wrong?" My response (as I remember it) was to say that this is the contrast between Genesis 1-2 and Genesis 4. The answer to the question is Genesis 3.

If we do not include this chapter in our creation ministry, we can unintentionally deceive our listeners. The creation has been spoilt. The far end of our diagram refers to the "new creation" which is promised throughout Scripture too. This will be "glory".

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Erratum:
We wish to apologise for omitting to mention that the article *Is the biblical "Adam" a scientifically valid concept?* by J H John Peet is a reprint of an article by permission of **Evangelicals Now**.
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View of Mount St. Helens.
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Articles **Book Reviews**

Flood theology: why does Noah's flood matter?

Stephen Lloyd

The account of creation in Genesis 1 and 2 comprises 56 verses, while the account of the flood in Genesis 6-9 comprises 81 verses – nearly 50% more. Many volumes have been written on the theology of creation but very little on the theology of the flood. Sermons on creation are far more common than those on the flood. Noah's flood appears to have little significance to modern Christians. Why?

- For many the flood is sidelined as a children's story. Despite the fact that it entails the most horrific, large-scale mass killing in history, it is seen as ideal Sunday School material, perhaps because it lends itself to exciting displays of animals.
- For adults, when the flood is addressed, it is taught as an isolated judgement story: sin leads to judgement and those who trust God are rescued. While this is undoubtedly correct it does not give the flood any special significance. There are many other stories in the Bible that teach the same lesson, so in this view, if Genesis 6-9 was removed from the Bible nothing substantial would be lost.
- Theistic evolutionists tend to pay very little attention to the flood. For example, Alexander (2008) gives it a single paragraph in his book. While Alexander and those who share a similar position believe Noah's flood was a historical event their concern is to minimise its historical and geological impact by insisting that it was a local, not a global catastrophe.
- Creationists do, to a degree, recognise the importance of the flood. Interestingly Whitcomb and Morris (1961) called their influential book "The Genesis Flood", not "The Genesis Creation." But generally speaking creationists' interest in the flood has focused on finding textual arguments for why the flood should be understood as a global, rather than local event – in other words countering their theistic evolutionist critics. This is the main concern of the biblical chapters in Whitcomb and Morris (1961) and in the more recent revision by Snelling (2009). There is very little treatment of the flood's significance theologically.

As creationists our lack of engagement with the theology of the flood is a mistake because it reinforces the perception that the flood is of minimal theological significance. That affects how creationist arguments for the universality of the flood are heard. The textual arguments for a global flood are very strong, but they are usually ignored by theistic evolutionists because they are seen as unimportant. If it is assumed that there is little at stake theologically over whether the flood was a global event, there is little incentive to engage with the creationist arguments.

In this article I will show that the strongest arguments for a global flood do not rest on isolated proof-texts, but on central biblical themes. I will do this by looking at the place of the flood in the overall story-line of the Bible i.e. the story that takes us from creation to new creation via the cross and resurrection of Jesus Christ. I am not simply placing the flood within the story-line (much as you might show how a particular biblical character fits into the Bible's time-line) but showing why the flood is essential to the coherence of the

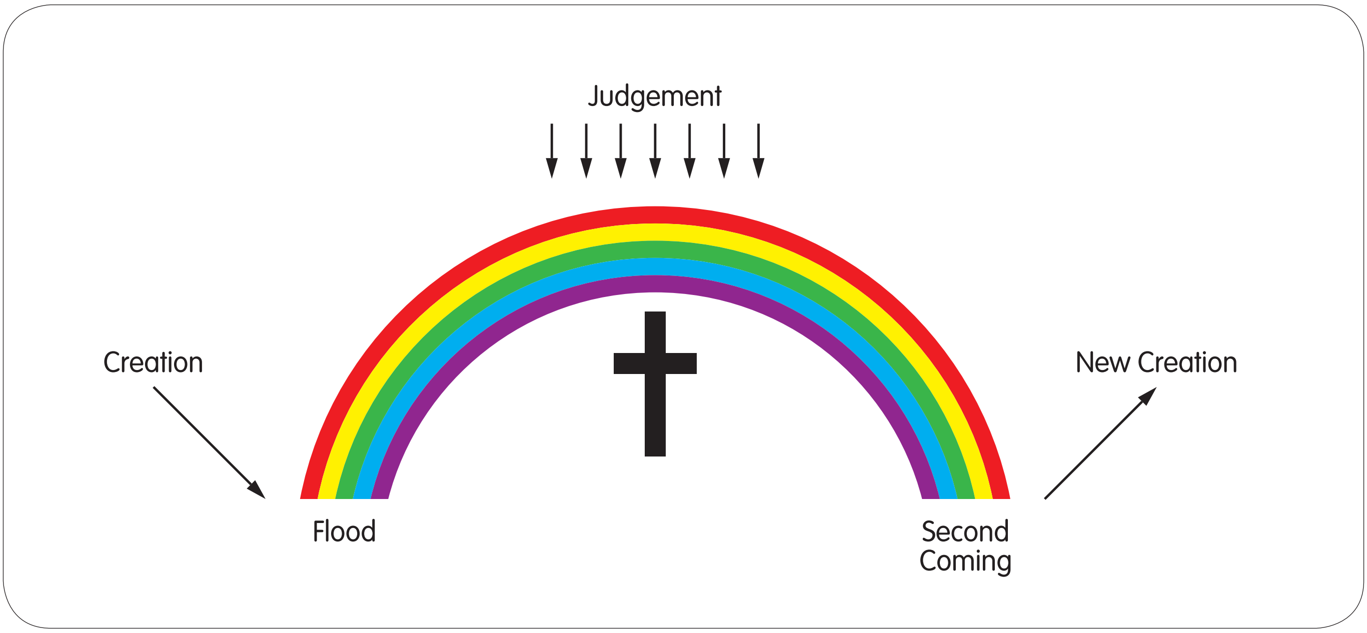

Fig 1. The flood in the storyline of the Bible. The rainbow is the symbol of the Noachide covenant that preserved the Earth from future destruction by a flood.

story-line of the Bible and thus to the gospel itself. In short, I am explaining why Noah's flood matters.

(1) All history: the flood in the story from creation to new creation

The flood is theologically significant because without it we are missing part of the story-line through which we interpret all history.

2 Peter 3:3-10 sets out a time-line for the Bible's story. There are three acts of creation occurring by word of God: the initial creation in which land and water are separated, the flood which reverses that separation (an act of "de-creation") where the waters again cover the earth before recreating what is our current world. Thirdly, our current world will one day be purified by fire and re-created. The flood is therefore one of the markers of key epochs in history: the world before flood, the present world and the new creation. The world we live in now is different to the original creation because of the flood.

The idea that the flood was starting a new epoch in history was something assumed in Jewish thinking. Peter himself assumes it in 2 Peter 2, in which Peter uses Noah as an example, a model, for the Christians he was writing to. Bauckham (1983) summarises the message of 2 Peter 2:5-9 in this way:

> "Noah, preserved from the old world to be the beginning of the new world after the Flood, is a type of faithful Christians who will be preserved from the present world to inherit the new world after the judgement."

This way of thinking comes from Genesis itself. In 7:11 the flood is dated precisely to be in the 600th year Noah's life, and the 17th day of the second month. This degree of precision is highly unusual in scripture and is consistent with the flood being the start of a new epoch. In addition, the description of the flood is one of *de-creation*. Creation is undone. The order of destruction in Genesis 7:21 mirrors the order of creation in days 5 and 6. But the world is then reassembled in acts of re-creation. Dry land reappears from the water (8:1-5). Plants begin to grow (8:11). Noah is like a second Adam from whom the world is re-populated, and the creation command to "be fruitful and multiply" is re-issued (9:1). Noah is told to have dominion (9:2) and all nations are descended from Noah (9:19). Noah is also like Adam in that he is portrayed as a man of obedience (6:22, 7:5) who later falls (9:21).

Peter sees the de-creation and re-creation of the flood as a parallel to the de-creation and re-creation associated with the second coming of Jesus. And Jesus makes the same link in his own teaching (e.g. Matthew 24:37-39). What is striking in what both Peter and Jesus say is that the original creation out of nothing is *not* the paradigm for the new creation, but the re-creation of the flood where a new world is made from existing material. This is consistent with the New Testament teaching that our resurrection bodies in the new creation will be transformed versions of our existing bodies.

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"The flood is theologically significant because without it we are missing part of the story-line through which we interpret all history."

Understanding the flood correctly in its place in the story-line of the Bible has important implications for its scale. There is a thread of universality throughout Genesis 1-11, required by the Bible's story-line. Davidson (1996) comments:

> "The theology of the flood is the pivot of a connected but multifaceted universal theme running through Genesis 1-11 and the whole rest of Scripture: creation, and the character of the Creator, in his original purpose for creation; uncreation, in humankind's turning from the Creator, the universal spread of sin, ending in universal eschatological judgement; and re-creation, in the eschatological salvation of the faithful remnant and the universal renewal of the earth."

In other words the flood must be of the same universal scope as the original creation and the new creation (as also suggested by 2 Peter 3:5-7 which brings these three events together). We instinctively read Genesis 1 as describing the creation of the whole earth and the destruction of the flood is described in terms of wiping out what God created in chapter 1 (Genesis 6:6-7, 7:4) i.e. the flood is as extensive as the original creation (Davidson, 2000). Hence if it is argued that the flood is a local event, the creation described in Genesis 1 must also refer to the creation of a small part of the world.[1]

(2) All peoples: the flood inaugurates an era of abundant grace

The second coming of Christ involves final judgement but it is more than this: it is the start of a sin-free world. Similarly the flood was a terrible, global judgement, but it was also the start of an era of grace to ensure sin would not triumph. The period between the flood and the second coming is an era of abundant grace centred on the death and resurrection of Christ (see figure 1).

Before the flood there was grace (for example Enoch walked with God, Genesis 5:24) but the world degenerated into rampant violence and perversion – a world spiralling out of control to self-destruction (Genesis 6:5&12). The hope inspired by Enosh (Genesis 4:26) when "men began to call on the name of the Lord" is long gone. Grace, it seems, has almost been snuffed out. The downward spiral is most graphically highlighted by the fact that there were only eight righteous people left by the time the flood came. The people of God across the entire earth were down to one family.

But after the flood there is a change: God makes a new (numerous) nation through Abraham. God's people increase and by the time we get to the end of the story, the people of God are a multitude that no man can number (Revelation 7:9).

There is also explicit teaching in the text that points to an era of grace beginning at the flood. First, as the flood reached its height "God remembered Noah" (Genesis 8:1). This the first time in Genesis that God is said to "remember", a word loaded with salvation significance: it means keeping a promise to save (Exodus 2:24).

Secondly, there is a striking contrast between what God says before the flood (Genesis 6:5-7) and after the flood (Genesis 8:21). Before the flood God is grieved over sin and his response is judgement. After the flood God echoes the words of 6:5 about man being incurably and perpetually sinful but says that this is now a *reason* why there will not be another flood.[2] So before the flood sin is a reason to bring judgement, after the flood sin is a reason to show mercy (Moberly, 2009). That promise of grace is the reason there is not an endless cycle of increasing sin, followed by universal judgement. The different response is prompted by Noah's offering (Genesis 8:20), a sacrifice that points forward to the cross.

We are still in this era of grace beginning at the flood as 2 Peter 3:9 makes clear. The "delay" in the second coming is to give more time to repent.

The era of grace is reflected in changes in creation itself as a result of the re-creation of the flood. This re-creation does not lead to a sin-free world like the new creation, but it does lead to a world more suited to sin than the original creation. It is a world in which the damage and destruction sin can cause is limited so humanity does not destroy itself completely. For example, the dramatic reduction in life-spans after the flood was a mercy in that it limited the damage one individual can cause: just imagine a leader like Stalin living for 900 years. In addition, the climate changes and frequent natural disasters after the flood would have made it harder to grow food, so more human energy would need to be spent on survival rather than fighting. The creation of nations would also help to limit the concentration of power (see God's concern in Genesis 11:6).

> "Even the suffering present in our post-flood world is understood by Jesus as "birth-pains" of the new creation (Matthew 24:7-8)."

2 Peter 3:7 notes that it is our present world, the world shaped by the flood, that awaits destruction (and re-creation 3:13) when Jesus comes again. It is *our* world that has already seen resurrection life, the in-breaking of new creation, not the world before the flood. Even the suffering present in our post-flood world is understood by Jesus as "birth pains" of the new creation (Matthew 24:7-8).[3] In other words the re-creation of the flood is the first step pointing in hope towards the birth of the new creation
when Jesus comes again.

So far under this heading I have argued that the flood inaugurates an era of abundant grace. I will now turn to consider who is included in this era of grace. Genesis is very explicit. The post-flood promises apply to Noah and his descendents and the animals that were rescued in the ark (Genesis 9:9-10). If there were other people and animals who were not affected by the flood (as would be the case in a local flood) the covenant God made after the flood, symbolised by the rainbow (9:12), would not apply to them.

This has direct implications for us today because of the gospel promise made to Noah's descendant, Abram in Genesis 12:3: "All peoples on earth will be blessed through you." Which "peoples" are included in this promise? Given the context this must refer to the nations who emerged from the confusion of Babel (11:9), peoples who are explicitly said to have descended from Noah's sons (9:19, 10:32). In other words the promise of a Saviour, a descendent of Abraham is for peoples (nations) descended from Noah's sons. If the flood were merely a local event there would be many people alive today who are not descendents of Noah. They would not be included in Abram's promise.

The waters rose greatly on the earth and all the high mountains under the entire heavens were covered. © andrej67, www.shutterstock.com

It is only on the basis of a global flood, destroying all people apart from Noah's family that we can consistently understand Jesus' command to "go and make disciples of all nations" (Matthew 28:19) as universal, applying to all humanity including nations not known to the New Testament writers.

In summary, when we understand the place of the flood within the story-line of the Bible it is clear that only a global flood provides a consistent basis for the promises made to Noah and Abraham applying to all the world's nations today.

Under this second heading I have focused on the *anthropological* universality of the flood. In the final section I will turn to the theological significance of the flood affecting the whole Earth, not just people.[4]

(3) All things: salvation involves the whole of creation

Christ's work of salvation involves the reconciliation of "all things" (Colossians 1:20). Salvation is not just about individual sinners finding forgiveness and a body-less life in heaven, but a new creation where believers have physical resurrection bodies in a cosmos that has been re-created. The flood is where this hope for the physical world is first made explicit.

Self-evidently the flood affects more than humanity alone. Animals are killed. Plants are destroyed. The very ground is no longer dry land. In Genesis 6:13 God explicitly says he is going to destroy the Earth as well as the people and animals. As was discussed earlier the flood is an act of de-creation, a judgement on creation itself. But why is creation aside from humanity under judgement? If the problem was merely human sin then surely an appropriate judgement would be to strike all humans dead through a plague or suchlike? The fact that God sends a flood indicates something is wrong with the whole of creation. Genesis 6 makes clear that it is not just mankind that is the problem. Genesis 6:11 says the Earth had become "corrupt", an obvious contrast to Genesis 1:31 where all God had made was "very good" (Clines (1972-3) p.133). *All flesh*[5] had become corrupt (6:12) – a term defined within the flood account as including animals as well as humans (7:15,16, 21). Animals were violent as well as people (6:13) and this explains why God was grieved at having made animals as well as people in Genesis 6:7. In other words the animals were not behaving in the way he had made them in the beginning. Animals have transgressed their created status under man, and while originally vegetarian (Genesis 1:30) now prey upon man (9:5).

Everything on dry land that had the breath of life in its nostrils died. © Glashout, www.shutterstock.com

> "The fact that God sends a flood indicates something is wrong with the whole of creation."

Clearly animals are not sinful in the sense of being moral agents consciously choosing to disobey God's commands, but they are part of a creation that has been thrown into rebellion against its creator because of man's sin. It is a world where "natural laws are broken by all levels of created beings" (Clines (1972-3) p.134).

Given that the behaviour of animals and the sinful actions of man are both anti-creational – crossing the boundaries and order set by the creator – the judgement of the flood, dismantling creation is a fitting punishment. In the flood, the boundary between land and sea is crossed, the "breath of life" (2:7) is taken away (7:22) and the Earth which has become "corrupt" (literally "destroyed") is itself destroyed (6:13) (Clines (1972-3) p.135).

In the story-line of the Bible the flood is the first of many judgements in which creation beyond mankind is also included (e.g. Exodus 7:14-11:5, Jeremiah 7:20, Zephaniah 1:2-3, Revelation 8:7-12). But it is also the first time that the redemption of creation is revealed. God "remembers" the animals as well as Noah (8:1) as the waters start to recede.

The recreation of the Earth after the flood is essential to Noah's own rescue. God could have saved Noah and his family by taking them off the Earth to live in a spiritual world. Instead he saves them with a boat made of wood, and makes a new physical world for them to live in. It is with the actions of a righteous man (6:9) that creation is rescued. Strikingly, Noah's name (5:29) means comfort or rest, understood in terms of bringing rest from the curse that has affected the ground. In other words Noah's mission was not only to preserve human life and limit human violence, it was to bring hope that the toil brought through the curse of creation would be relieved.

It is not hard to see in Noah a type of Christ, the truly righteous man, whose sacrifice on a wooden cross rescues us from judgement, and whose bodily resurrection signals the promise of a new creation. But Noah also anticipates the "sons of God" whose bodily resurrection will be accompanied by the liberation of the whole of creation (Romans 8:19-23).

Noah's flood is the first time that we discover that the salvation promised in Genesis 3:15 is not only the spiritual salvation of the souls of individual sinners, but the redemption of the whole of creation. God loves creation. The Christian hope is physical. We will live with God, in resurrected bodies, in a new creation.

Conclusion

If these theological lessons flow from the flood then Noah's flood, including its extent, *must* matter. With so much at stake theologically, we are compelled to develop scientific models that are consistent with a global flood in human history. And we are also compelled to give the flood a far more prominent place in our theology of creation and salvation. ■

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End Notes

1. The idea of a local creation was suggested by John Pye Smith in 1840. The arguments against Smith's interpretation as set out for example by Ramm (1955) work just as well against understanding Genesis 6-8 as describing a local flood.
2. The New International Version tries to smooth over the tension in this verse by suggesting that God shows mercy in spite of man's sin rather than because of man's sin. For sin to be a reason to show mercy doesn't make sense to human reason, but that is the whole point about God's grace – it goes beyond human reason!
3. Intriguingly, the troubles that Jesus cites (national warfare, earthquakes and famines) are all features of the post-flood world. (Assuming that famines are the result of disrupted weather patterns post-flood).
4. The flood may have affected creation beyond the planet Earth. In this section, even where I use the more general term "creation", my focus is on the Earth because it is the effects on the Earth which are made explicit in the biblical text.
5. Here I am quoting from the New Revised Standard Version which, unlike the New International Version (which I have quoted elsewhere), does not wrongly translate "all flesh" as only humans.

Naturalism's tightening grip on education and science

David J. Tyler

Within the UK, we have a large number of vocal and influential people who want to exclude all expressions of biblical Christianity from education, whether state funded or independent. Their first target is to banish the concept of creation and replace it with the exclusive teaching of evolutionary theory. These crusaders present themselves as speaking for Enlightenment science and they make much of the supposed consensus within the scientific community about these issues. Their latest success has come with the Department for Education (DfE) requiring church schools converting to academies to adhere strictly to the evolutionary account of origins when teaching science.

The new development has been warmly welcomed by the British Humanist Association's Head of Public Affairs Pavan Dhaliwal: "Coupled with the fact that maintained schools must follow the national curriculum, which from September will include a module on evolution at the primary level – the other thing we called for – we believe that this means that the objectives of the campaign are largely met. We congratulate the Government on its robust stance on this issue."

In one sense, the policy has not changed – merely spelled out again. This is how a spokesperson for the DfE put it: "It is already the case that all state schools, including academies, are prohibited from teaching creationism as scientific fact. That has not changed. The funding agreements for academies and free schools have been restructured into one document and drafted in plain English, as part of an ongoing process of simplification."

However, we should note that there have been some significant changes from the earlier documents. Science has been redefined, as has creationism. The wording is overtly an expression of naturalistic philosophy: the principle that nature is all there is. In 2007, some guidelines were produced that had a definition of science that was acceptable to creationists and evolutionists. It read: "Science: the systematic study of the origins, structure and behaviour of the physical/natural world through observation, theorising and experiment." At that time, Creationism was defined in terms of some distinguishing "beliefs". Whilst these definitions were dominant for at least 5 years, the new funding agreement presumes that the science of origins has to be naturalistic if it is to be considered science at all.

The new emphasis is apparent in the way Creationism is defined. The DfE regards creationism as "any doctrine or theory which holds that natural biological processes cannot account for the history, diversity, and complexity of life on earth and therefore rejects the scientific theory of evolution".

"Natural biological processes" are said to be sufficient to "account for the history, diversity, and complexity of life on earth". The DfE goes on to assert that there can be no "evidence based theory" that can challenge this principle. The sufficiency of natural processes is first presumed, and then imposed, on educational programmes. Now we know that it is not difficult to find acknowledgements in the research literature that we do not have an explanation of the origins of life via natural processes, nor the origins of the first eukaryotic cell, nor multi-cellular organisms, etc. However, this does not matter to advocates of materialism, because naturalistic science is committed to the principle that answers will be found via natural processes. Not only are they blind to the gaps in their own theories, they are slow to appreciate the importance of biological information (which is crucial to any scientific study of life).

So a philosophical assumption (regarding natural processes) is being confused with the essence of science. This leads to a second concern: that evidence-based reasoning is sacrificed before the altar of naturalistic philosophy. They insist that there can be no evidence to challenge their principle that "natural biological processes are sufficient". This is how they can exclude intelligent design from the classroom: empirical arguments for Design (such as from Precambrian complexity, irreducible complexity, specified complexity, and evidences of an edge for evolution) are not allowed by Her Majesty's Government as evidence for "a valid alternative to established scientific theory". In fact, if naturalism is presumed, it is impossible for anyone to falsify this approach, because (by definition) there can be no evidence against naturalism. When creationists appeal to evidence to support their arguments, they are always dismissed as advocates of pseudoscience.

> "They insist that there can be no evidence to challenge their principle that "natural biological processes are sufficient"."

Which brings us to a third concern about the DfE documents: the prominence given to consensus views. If there is one thing that the history of science should teach us, it is that giving great weight to consensus thinking is a disaster for science. Science thrives when there are no artificial barriers to freedom of speech and open enquiry. Whenever consensus arguments hit the media, the agenda is not science, but vested interests, politics, funding, prestige or control. Strong pressures are exerted to maintain the consensus – and we have seen secularists very active over the years getting science organisations to affirm a naturalistic definition of science. They conveniently forget that the explosive growth of science (known as the Scientific Revolution) was rooted in Theistic Science. The Enlightenment came later. Those of us who want to fly the flag again for Theistic Science are swimming against the tide – but what we do not want is to lose our voices completely because of an imposition of "consensus" thinking.

Darwinism has been described as a "universal acid" which corrodes and consumes religion and all superstitious ideas. However, the universal acid is really the philosophy underpinning Darwinism – which is materialism. This universal acid is ultimately self-destructive. It destroys science by presuming naturalism and declaring what the world is like (rather than finding out about our world using the scientific method). It destroys science because of unacknowledged blind spots (where the evidence does not fit into the materialist world). It destroys science by appealing to consensus, closing down enquiry and discussion, and empowering the thought police. This is the worldview that is being imposed on our nation's young people. This is a wake-up call for British Christians. If we care about these things, it will drive us to action. The Church of Christ must seek her Lord for guidance when responding to these challenges. We can write to our MP or to the Secretary of State for Education (Nicky Morgan); parents can talk to teachers of their children; we can stimulate discussion in our churches so that collective responses can be developed; and most of all, we can pray that the Lord will lead us and that revealed truth will not be dishonoured and despised. ■

Humans are "fearfully and wonderfully made [by God]" but this thought is prohibited in science classes. © Solstock.

Irreducible design and overdesign in man

A case study of the human hand

Professor Stuart Burgess

Irreducible design and overdesign

In contrast to the theory of evolution, intelligent agency is not limited to incremental changes and the blind forces of natural selection. Therefore intelligent agency can create things that naturalistic evolutionary processes could never create. For example, an intelligent agent can create irreducible mechanisms that require many parts to be present simultaneously in order for the mechanism to have useful functions. Evolution cannot produce irreducible mechanisms because it cannot plan ahead and bring many parts together in one go to form a functioning assembly. Intelligent agents can also create overdesign where something is designed to perform to a much higher level of sophistication than is actually necessary for survival. Evolution cannot produce overdesign because with evolution there must be a survival reason for every design feature.

> “In this article we consider irreducible design and overdesign in human hands.”

Engineering designers commonly produce irreducible design in products like robots which contain many sophisticated mechanisms. Engineers also commonly produce overdesign in products like motor cars because they are designed for levels of luxury and comfort that are far beyond what is actually required for the car to carry out the transport function. If we see irreducible design and overdesign in nature, this represents powerful evidence for intelligent design and evidence against evolution. In the first article we considered evidence for intelligent design in the human upright stature. In this article we consider irreducible design and overdesign in human hands.

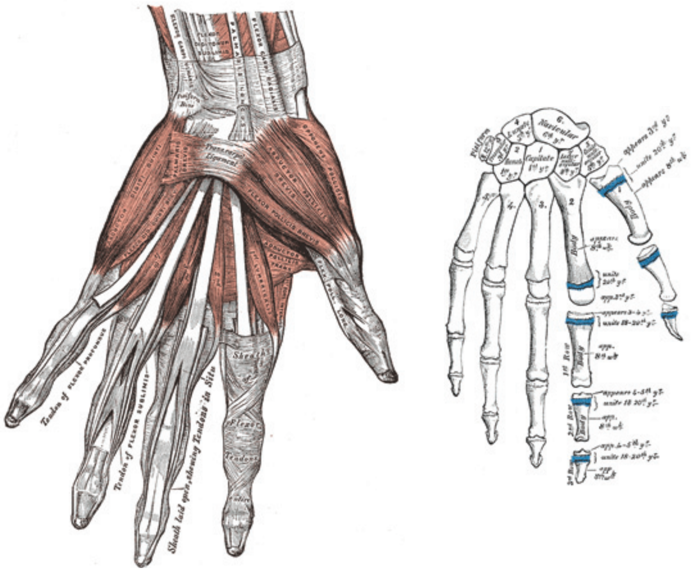

Tendon of flexor profundus
Tendons of flexor sublimis
Sheath laid open, showing tendons in situ
Navicular
Capitate
Body
1st Row
2nd Row
3rd Row
appears 3rd yr
unite 20th yr
appears 8th wk

Fig 1. Anatomy of the human hand (taken from Gray’s Anatomy).

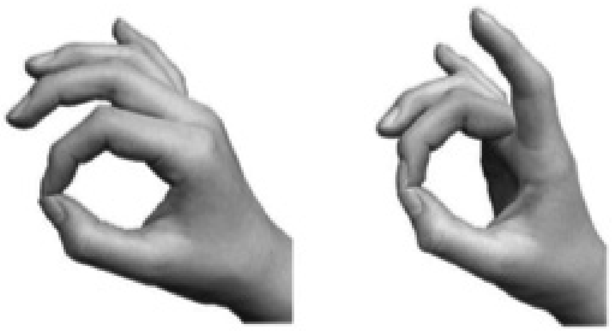
Unique features of the human hand

Evolutionists claim that human hands evolved because there were survival advantages in making and holding tools for basic farming and hunting. However, farming and hunting tasks do not require the extreme levels of skill found in human hands. The amazing skill of human hands can be seen in a wide range of applications such as writing, art, typing, surgery and the playing of musical instruments. The unique design and abilities of the human hand provide compelling evidence of intelligent design.

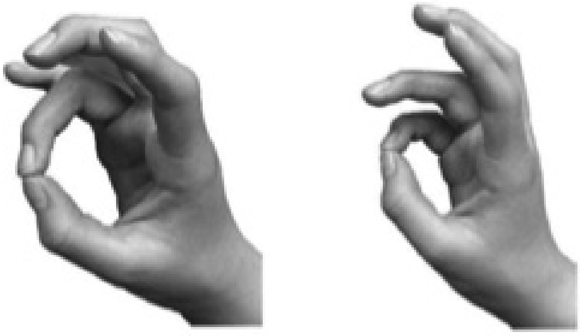
(1) Unique range of movement

The anatomy of the human hand is shown in Fig. 1. Each hand has around 27 bones, 35 muscles and a very large number of ligaments that hold the bones together. About half the hand muscles are located in the forearm with the other half located in the palm of the hand. The muscles are connected to the hand and fingers by a network of tendons which have a remarkably precise design as shown in Fig. 1. Each finger can be made straight (extension), curled up (flexion) and moved sideways (adduction and abduction).

Human fingers have a full range of movement from a straight finger to a tightly curled finger. This means that humans can make any hand position from a clenched fist to a flat hand by flexing the finger joints. The ability to make a full range of finger movements is important for certain gestures and grips. One research study has identified at least 58 distinct types of human hand movements (Napier, 1971). In contrast to humans, apes have naturally curved fingers and a limited range of finger movement. The reason why apes have curved fingers is that this is ideal for gripping branches. Even though there are superficial similarities between ape hands and human hands, the agility and range of movement of human hands is vastly superior.



(a) Thumb and index finger   **(b)** Thumb and middle finger



(c) Thumb and fourth finger   **(d)** Thumb and fifth finger

Fig 2. Opposability of each finger to the thumb. © S. Burgess

(2) Unique fine motor control

The human hand contains muscles and nerves that allow very fine movement of the fingers and thumb. One of the requirements for fine control is that of small muscles units, called bundles of muscle fibres. Each of these bundles is called a motor unit and each unit has a motor nerve for stimulation of the muscle. The degree of precision control of a muscle is dependent on the number of fibres within each unit. In the thigh muscles there are typically over 100 fibres in each motor unit so that fine control is not possible. In contrast, the fingers typically have around 10 fibres within each motor unit and this small number of fibres allows very fine fingertip control (Napier, 1956).

(3) Unique fully opposable thumbs

Another unique feature of the human hand is that it has fully opposable thumbs that can make face-to-face contact with the end of each finger, as shown in Fig. 2. Fig. 2 shows how each finger can make a circular pinch grip with the thumb. Human thumbs are opposable because of the flexibility and precise dimensions of the fingers and thumb. In contrast, apes have relatively short thumbs and inflexible palms so they cannot make a pinch grip between the thumb and the fingers.

(4) Unique motor cortex

The part of the brain responsible for muscular movements in the body is called the motor cortex. About a quarter of the entire human motor cortex is devoted to controlling the muscles of the hands. The large part of the motor cortex dedicated to the hands is remarkable because the hands are a relatively small part of the body and contain only about 10% (by number) of the muscles of the body. The reason why such a large part of the motor cortex is required to control the hands is that there are a very large number of possible hand positions to control. The human hand has around 27 joints with 19 joints having one way of moving and eight joints having two ways of moving. The fact that babies and children spend several years learning to control their hands illustrates the large amount of learning involved in controlling the hands.

Unique abilities of the human hand

The amazing agility of human hands enables humans to perform many skilful tasks. There are four main types of hand skills that humans have which are: gesturing, power grips, precision grips and keyboard skills. Of these skills apes can only perform a crude type of power grip.

(1) Unique gesturing

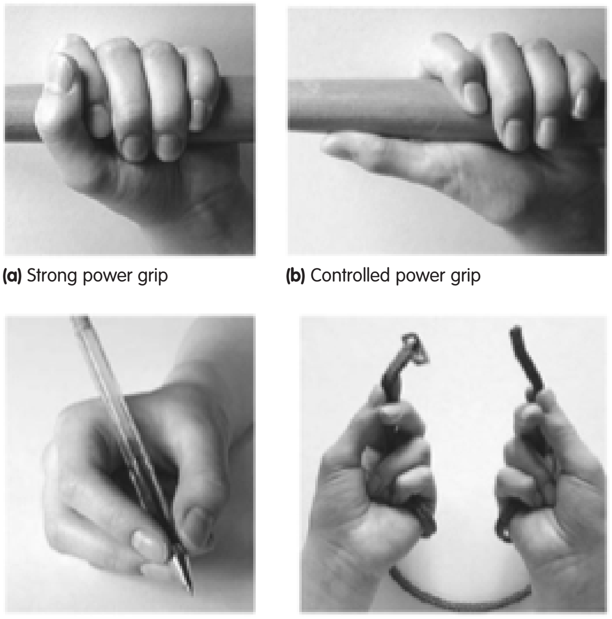
Humans can make many types of precise hand gestures such as pointing, beckoning, thumbs-up and halting (with a flat hand). Gestures can be a very important form of communication, especially in sign language. The fact that complex information can be transmitted by sign language of the hands shows that gestures can be very precise and sophisticated. In contrast to humans, apes do not make hand gestures.

(2) Unique power grips

The power grip is where the whole hand grasps a cylindrical object such as the handle of a sports racket. When gripping a sports racket, the four fingers are placed on one side of the racket and the thumb is placed on the other side to make a very strong and firm grip, as shown in Fig. 3. The power grip can be made either with the thumb opposing the fingers or with the thumb pointing away from the fingers, depending on the type of control required.

(3) Unique precision grips

The fine motor control of the hand and the opposability of the thumb make it possible for humans to perform different types of precision grip where the thumb is pressed



(a) Strong power grip

(b) Controlled power grip

(c) Tripod precision grip

(d) Combined power and precision grip

Fig 3. Types of human grip. © S. Burgess

on to one or more of the fingertips. When holding a pen, most people use the thumb and two fingers in a tripod precision grip, as shown in Fig. 3. The human precision grip is so sophisticated that very delicate tasks can be carried out in areas such as surgery and drawing. Humans can also have a combined grip where some of the fingers hold on to something whilst other fingers make a precision grip, as shown in Fig. 3. Engineers (including the author) have tried to build robots that can perform a precision grip like a human hand. However, these robotic hands are vastly inferior to human hands (Burton *et al.*, 2011). Apes cannot make a precision grip with their hands because they do not have fine motor control or fully opposable thumbs.

(4) Unique keyboard skills

Human fingers are often used to make precision touches in applications such as keypads and keyboards. Piano playing is one area where the extraordinary control of fingers can be clearly apparent. However, any kind of typing represents a task of great skill.

Irreducible design and overdesign

Irreducible design can be seen in precision grips such as the tripod grip because these require several design parameters to be present simultaneously such as the length of each finger and the flexibility of the palm. The precision grips also represent overdesign. According to evolution, there must have been a survival advantage in the thumb, index finger and middle finger being able to make a precise tripod grip to hold items like a pencil or needle. However, there is no reason why a hypothetical hunter-gatherer ape-man would need such a precise tripod grip. In addition, archaeological evidence shows that human technology such as writing and pottery have been invented within the last few thousand years, showing that humans had the precision grip before inventing or using these technologies. Irreducible design can also be seen in the way there is a simultaneous need for a motor cortex that can control fine movements and a hand that can make fine movements. There is no use in the hand evolving a capability for fine movement unless there is already a brain that can control that fine movement.

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> “Piano playing is one area where the extraordinary control of fingers can be clearly apparent.”

Unique purpose

Skilful hands are one of the most unique features of humans. This is why the psalmist said: ‘If I forget you, O Jerusalem, let my right hand forget her skill!’ (Psalm 137:5). And this is a key reason why the psalmist said that humans are fearfully and wonderfully made (Psalm 139:14). Other areas of overdesign in humans include upright stature, intricate speech, fine skin and powerful brain. These aspects of overdesign show that humans are designed for far more than mere survival. Humans are designed to be creative, spiritual beings and stewards of creation. In Psalm 8 we read that the heavens were the work of God’s fingers. Even though this is metaphorical language, it still shows that a key purpose of fingers is to be creative.

The wonderful design of the human hand provides powerful evidence for special creation. Isaac Newton said that the thumb alone would be enough to convince him of the existence of a Creator. Skilful hands not only provide great evidence for a Creator but also show that God cares deeply for man and wants man to enjoy life to the full. ■

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Lessons for Flood Geology and Post-Flood Ecology

J H John Peet

The story of the recent history of Mount St. Helens is widely documented and filmed. But it is interesting to compare the secular reports and creationist discussions. Most readers will probably have a rough idea of what happened in the disaster, but it is worth reiterating events and giving some detail.

Pre-catastrophe ecology

Mount St. Helens is in the western state of Washington, USA (see Fig. 1). It is part of a range known as the Cascade Mountains.

It was very popular for its beauty and the study of its flora and fauna. Living in this region were:

- **Large mammals such as cougars, elk, deer and bears**
- **Smaller animals like chipmunks, squirrels, rabbits and raccoons**
- **Birds such as eagles, jays, woodpeckers, owls, wrens, sparrows and crows**
- **Fish such as salmon, various trout and other fish**
- **Reptiles, insects and amphibians like newts, salamanders and frogs**
- **Plants including ferns, huckleberries, and hundreds of other plant and shrub species**
- **Native trees like the firs, alder, western hemlock and western red cedar**

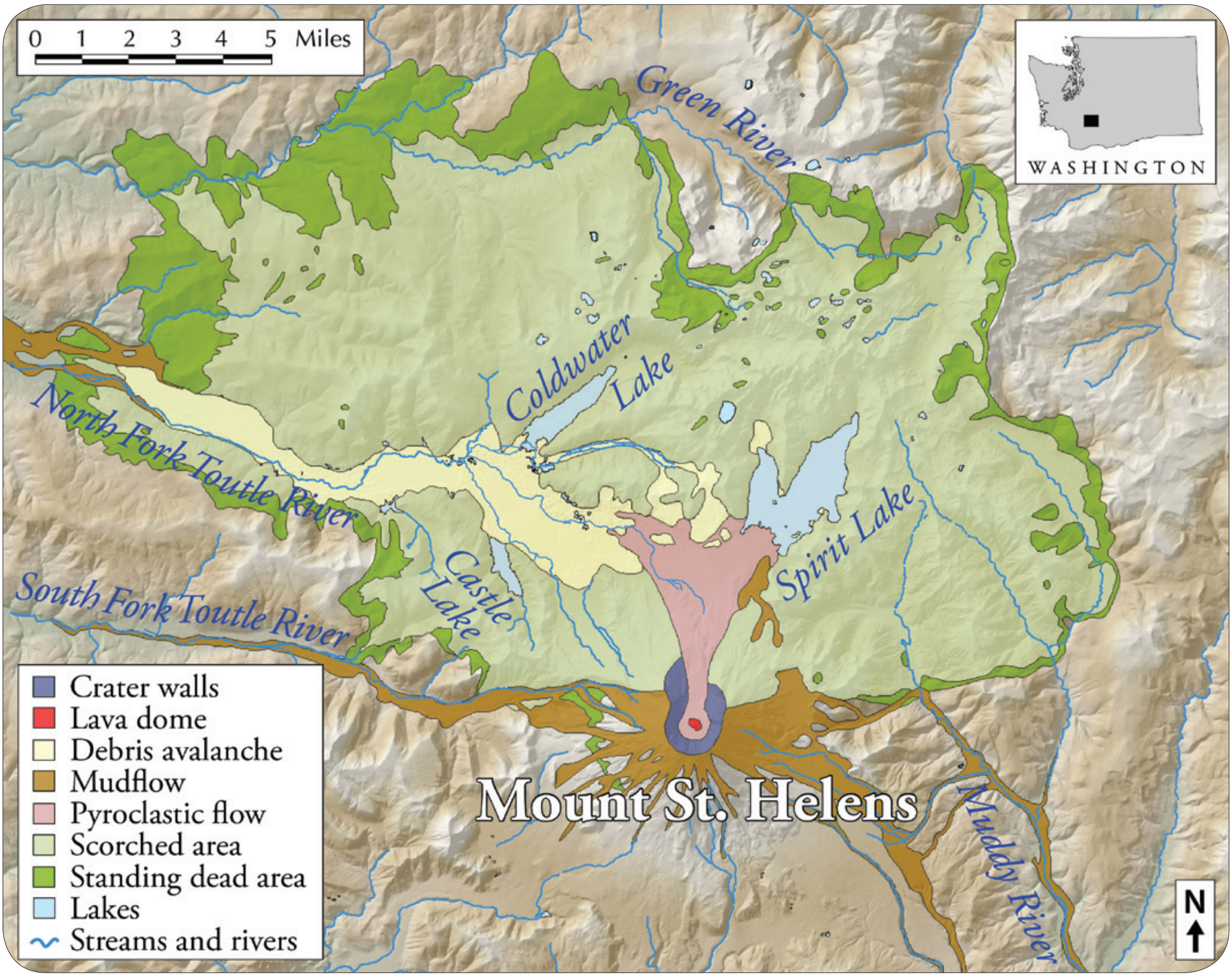


Fig 1. Survey of the Mount St. Helens area after the eruption showing the extent of the deposits; Note the relative positions of the Mount and the Spirit Lake (about 5 miles). © US Forest Service, reproduced with permission

Early in 1980 there were rumours following rumblings in this "extinct" volcano. Some, like the residents around the mountain, dismissed these as "nothing significant" but the geologists became increasingly concerned and set up observation posts in the area.

Catastrophic disaster

D-day was Sunday, May 18th 1980. At 8.32am a massive landslide occurred from a bulge high up on the mount. It was the largest landslide in recorded history. It was followed by a vast eruption of ash. The column of this ash reached to 30 miles high and spread 95miles wide. Day turned to darkness; residents who had not heeded the warning were buried alive.

One USG surveyor was situated a few miles from the epicentre. He had time only to comment that he thought things were about to happen before he was buried. Neither he nor his vehicle and equipment have been found.

One reporter (David Crocket, KOMO-TV photographer) who was on the scene commented: *"During those 10 hours I saw a mountain fall apart. I saw a forest disappear … I saw that God is the only one who is immovable … I feel somehow that I'm being allowed to start over – whatever is in His master plan for me."*

The explosion has been compared to the force of thousands of Hiroshima size bombs. The hot ash was spread widely (even into neighbouring States) and to hundreds of feet in some places. 100m of ash fell into Spirit lake, raising the water level by 65m. The debris falling into the lake caused a 260m high wave (a *tsunami*). It washed up the northern slopes, scouring trees and topsoil, washing the trees back into the lake. They floated horizontally covering a vast area of the lake (Figure 2). Subsequently the trees gradually turned upright and sank at different rates. Around 150,000 acres of forest were destroyed.

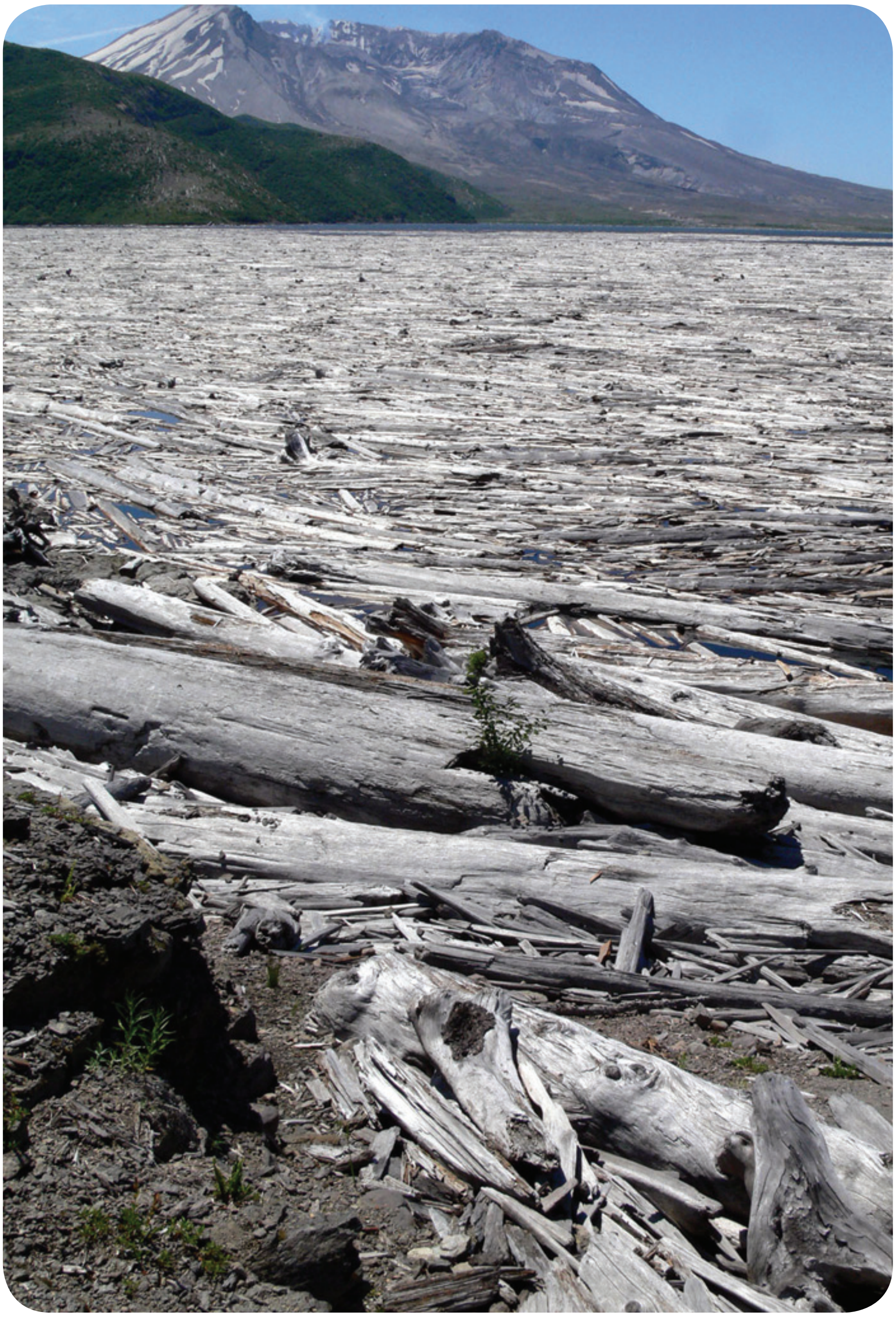


Fig 2. The coverage of Spirit Lake by felled trees. © Gary Gilardi, www.shutterstock.com

This effect has been followed thoroughly by creationists. They noted that as the trees sank at different rates, and as the sediment settled, the upright trees settled in different layers. Traditionally such effects have been attributed to successive forests.

Another effect relates to the foliage *etc.* of these trees. Significantly, the blast stripped the trees of their leaves, branches and bark. These were deposited in the lake and gradually settled at its base. It has been shown that, within 3 years, they were being converted to peat.

But there were other disastrous effects for the lake. Temperature reached 37°C, its alkalinity increased 20-fold and so photosynthetic processes were impossible. However, there were some bacteria (*e.g. Legionella*) that could survive these conditions and acted on the debris and multiplied to 500 million per cm^3. Toxic chemicals were produced and noxious gases produced. Life became impossible!

There was a pyroclastic (rock) flow in evening of June 12, 1980, which covered a wide area of the previous ash deposit. It travelled across the ash layer at 100 mph. More on this in a moment!

A further eruption occurred on March 19, 1982 and sent pumice and ash 9 miles into the air, and resulted in a lahar (a huge snow avalanche and a 4 million cubic metre flood of mud caused by the swift melting of the snowpack). One effect of this was to erode canyons into the landscape. In fact, the flow demolished the Pine Creek bridge and a 37 tonne boulder, which was over 5m across was lifted 9m up and on to a road!

The formation of these canyons is not normally described in secular literature, but has interesting implications for creation geology.

The canyon effect has been described as a 1/40th scale Grand

Canyon. The power of the water-mud flow has challenged the popular claim that the Grand Canyon channels have been formed by the slow erosion work of the Colorado River over millions of years. There has even been a reconsideration of a despised Amerindian tradition that the canyons were formed by the collapse of natural dams holding in the water of lakes high over the region.

I would note in passing that I think this whole scenario must cause us to think through more carefully how the violent and catastrophic biblical Flood (called uniquely the *mabbul* in Hebrew) could explain the orderly layering of the rocks of the Canyon. Creationists can be just as easily biased by their own model as anyone else!

One of the interesting aspects of this lahar flow was its exposure of the detail of the previous deposits. This effect is also overlooked in the non-creationist media. When the pyroclastic flow is studied it is found to consist of many highly defined strata. As the flow spread across the previous ash formation (at 100mph) the rocks settled out by size. This stratified deposit occurred in three hours. Note, as the flow progressed, the layers were formed concurrently. This effect has been demonstrated in the laboratory and is reproducible. They were definitely not deposited subsequently and over millions of years! BUT, again be careful not to extrapolate this to the different strata of the geological column: there is no evidence that those huge strata were formed concurrently by a horizontal flow. We see the evidence demonstrating the fine layering effect only.

The disruption and destruction were complete. There was no sign of life. It had all been wiped out in one mighty catastrophe. How could life return after such a disaster? Remember that the conditions now were hostile to life.

Post-catastrophe recovery

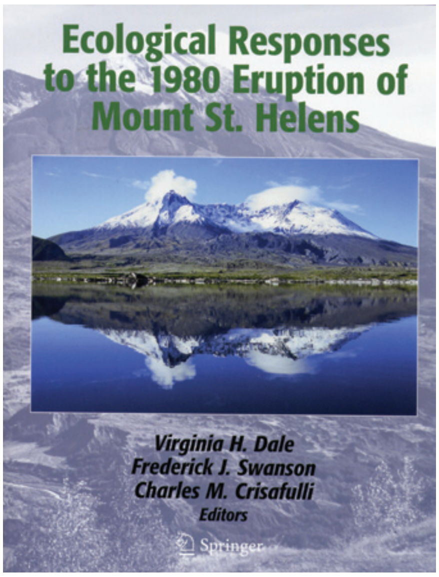
As one researcher, Dr Eldon Franz, has commented, *"The intensity of work that is being carried out there I don't think will be matched anywhere."* It has been well studied and documented. A major report is that by Dr V. H. Dale and colleagues, ***"Ecological Responses to the 1980 Eruption of Mount St. Helens"*** . Well worth a read even though it is a little out of date now.

Dr Dale summarised the findings very well: *"The patterns of impact and destruction were not as anticipated and survival and establishment have also been different than theory would have predicted."*

Dr Jerry F. Franklin made a similar point: *"We knew very clearly what was going to happen afterward and we were very clearly wrong. … The richness of the legacy of organisms that was there, the rapidity with which recovery occurred and the incredible diversity of ways in which organisms were able to survive – it just astounded us."*

So, be prepared to be astounded!

It is perhaps helpful to consider a graphic (Figure 1) prepared by Dr Dale *et*



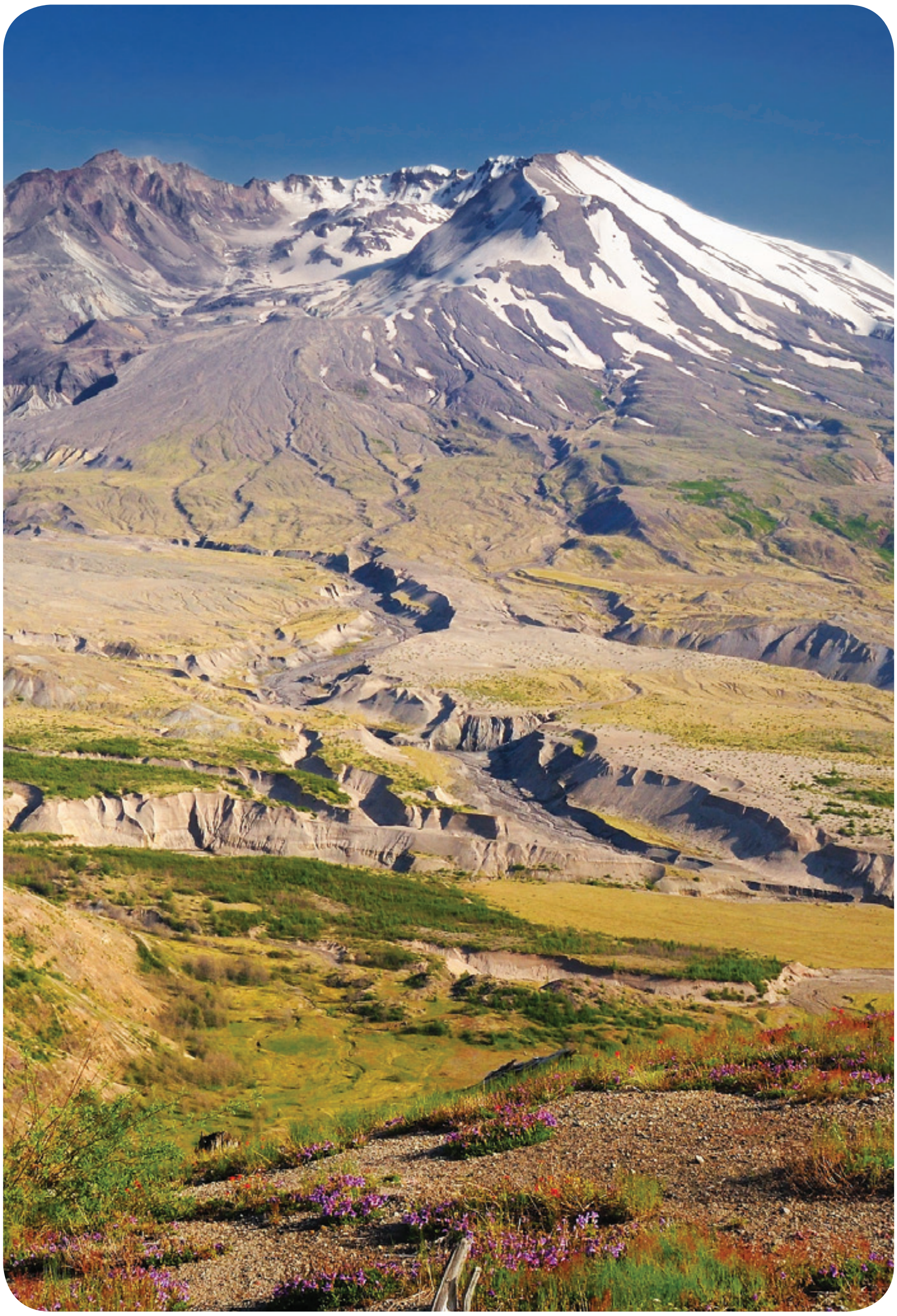


Fig 3. Mount St. Helens with examples of eroded canyons. © Tusharksley, www.shutterstock.com

al. The coloured areas highlight the extent of the various deposits *etc.*

To understand the recovery process in detail, we should consider the timing of this event (May). Salmon were out at sea and so not eliminated. Migratory birds similarly were out of the area at that time. Some plants were still in winter dormancy. Then, the explosion was in the early morning, so nocturnal animals survived in their burrows. Further, forests had recently been harvested, so there was an abundance of wind-borne seeds.

Dr Dale *et al.* suggest that we can break down the recovery into distinct effects: the emergence of survivors into the new ecological situation; the arrival of colonisers, even humans, from outside the area; and, finally, the long-term climatic events (the current time).

(a) Survivors

Could there be such after this horrific event? Yes, is the amazing answer.

The first to appear was the "pocket gopher". These burrow deeply and so were protected from the heat of the deposits above them. They live off plant roots and so could feed before they escaped from their burrows. In the process of digging themselves out, they churned up the ground with nutrients and fungi and the mounds became fertile ground for wind-blown seeds.

A variety of ants, beetles and salamanders were also able to survive these conditions. Similarly, some plant seeds survived and were carried to the surface in the rolling avalanche! Among these were "pearly everlasting". They love sunlight and can cope with harsh conditions in order to reach it! After the explosion, they were appearing atop a windblown ridge. Robin Kimmerer reported on the appearance of "fiddleheads" and these in turn could host incoming spiders.

The resilience of plant life both during and after the explosion amazed workers. One researcher commented, *"The resilience of plant life amazed researchers. Salmonberries thrived after pushing upward through 8 to 12 inches of ash …"*

Another surprising finding concerns the amphibia. They survived in ice-covered lakes, albeit in small numbers, and gradually recovered, though the rates of recovery were very varied.

We have noted the effect of natural events in helping these survivors. Things like falling debris eroding surfaces and so liberating buried plants. Another effect was bank erosion which exposed shrubs and trees, which were washed downstream and replanted. Even the rain had a role in channelling into slopes, exposing buried roots.

(b) Colonisers

Among the first arrivals were arthropods, especially insects. A huge range of them has been recorded. Their survival in the pumice region was nil; but instead their reappearance was due to aerial dispersion. For example, it was estimated that spiders arrived 2 million in one day! The continuing survival of these creatures depended on plant recovery, but even those that failed to survive provided food for others!

The elk returned in the first year. Their return had been predicted to be after several decades! An interesting aspect of these returning creatures was that they experienced multiple births. Further, their scat enriched the soil, so feeding new plants. They also transported 7 species of vascular plants and 3 of fungi to a lupine patch! On the other hand, they had other effects: they were responsible for 82%

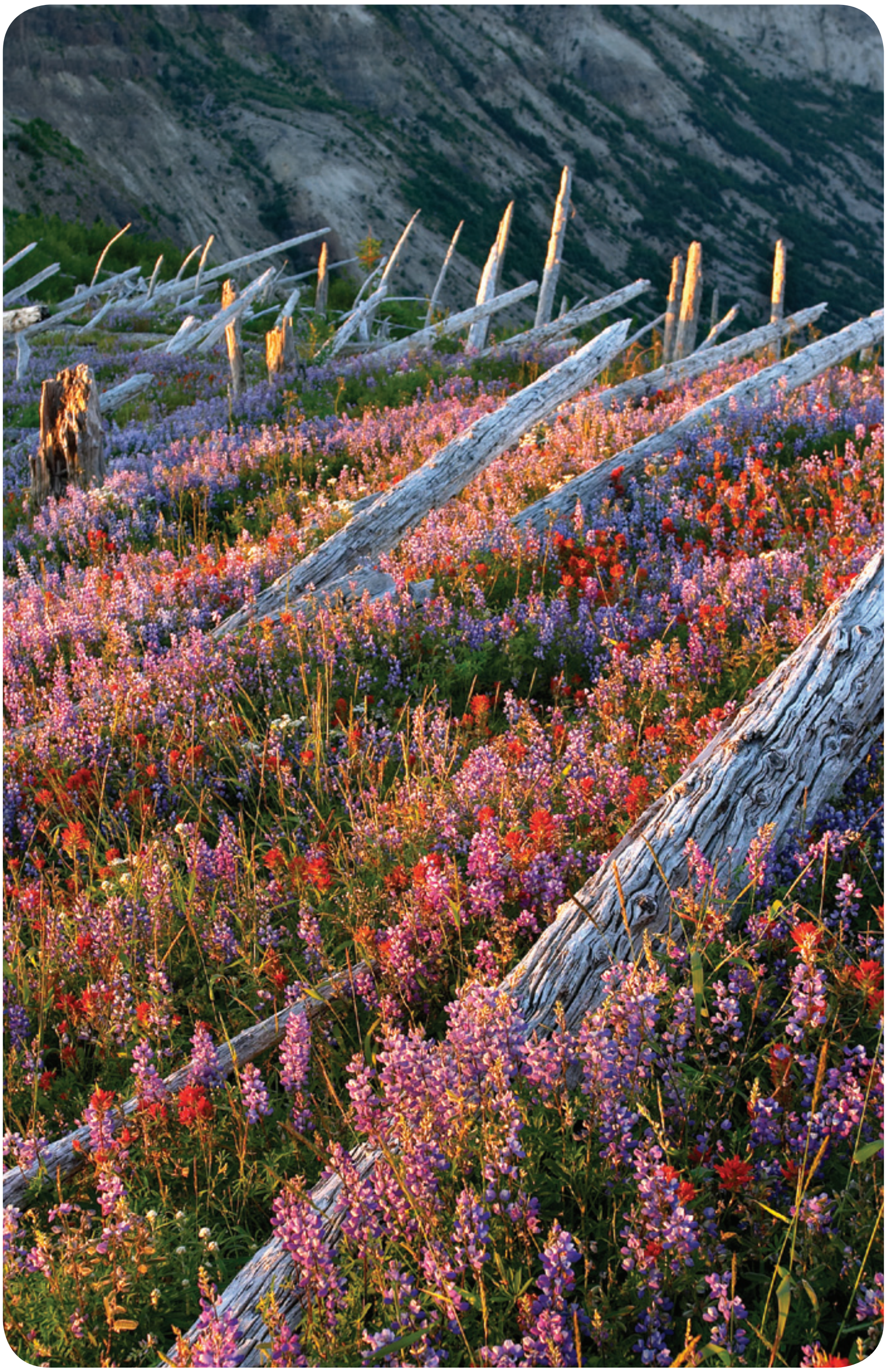


Fig 4. Recovery of plant life, including lupine on the slope of Mount St Helens.
© Zschneph, www.shutterstock.com

mortality of conifers! However, they had little effect on the growth of deciduous trees. This was a seasonal effect as the conifers were the only green trees at the time of the elk activity in the lower regions (winter-early spring). Shrubs (e.g. sword fern) also increased in the grazed areas. As they grazed, the elk caused the collapse of gopher tunnels which provided access to salamanders.

The arrival of the birds varied according to the zones in which they nested. One of the first arrivals was the raven with its broad diet. (Interesting comparison with Noah and the Flood!). In the blow-down zone, the ground foragers (for example, mountain blue bird, hairy woodpecker and vaux swift) were the first arrivals but others (*e.g.* warbler and willow flycatcher) had to await the growth of erect, woody vegetation 7 years later. Different species of birds (red-winged blackbird, rock wren and water pipit) returned to the pyroclastic zone later, due to its poorer flora resource.

The lupines are a fascinating story in their own right. Charlie Crisafulli followed the arrival and spread of the lupines. In one location, he estimated 24,000 in 3rd season, which had risen to 164,000 by 1989. These plants are valuable as they fix atmospheric nitrogen in the soil, so preparing the ground for more plants. Also, they attract bees and other small animals find refuge under their leaves. BUT, their spread prevented other plants rooting!

However, the natural processes compensated for this. The solution was the arrival of the caterpillars of the *Filatima* moth which attack the leaves and other species, such as the tortricid moth, attack the roots and so they reduced the spread by a factor of four.

But many plants require *Mycorrhizae* fungi for symbiosis. The fungi provide nitrogenous and soil nutrients and the plants themselves provide a photosynthetic pathway to carbohydrates for the fungi. Again, contrary to expectations, these fungi arrived on the pumice plain and prospered!

The Red Alder has been important the recovery process. It is fast-growing in the debris-avalanche area and also fixes nitrogen in the soil. Obviously it too provides shade important to other species. However, 2012/2013 saw the appearance of billions of "tent caterpillars". They feed on alder tree leaves (which do recover). This results in more light reaching ground plants, but it does make the trees more susceptible to drought, *etc.* The droppings of these caterpillars act as fertiliser to plants and they are also food for birds, *etc.* and their moths feed bats.

Fir trees were apparently wiped out in the catastrophe, but in 2008 two were found to be springing up close to one of the dead stumps.

But, what about Spirit Lake? The last we noted on this place was that "life was impossible" because of the alkalinity and toxicity. BUT, chemotrophic bacteria that were able to cope with this environment acted by chemosynthetic routes to produce new organic material. The weather helped recovery by fresh water flowing in and replenishing the oxygen. Aerobic microbes now took over and plankton reappeared so facilitating photosynthesis and yet more oxygen! In fact, over five years, the system switched back to the pre-eruption system; the bacterial levels had returned to normal by 1986.

> "As we observe the 'new' Mount St. Helens we note that 'the clues are there'."

The Lake is still covered with log mats, but these are reducing in quantity. Fish have returned – but it has been suggested that could be due to human intervention! In 2005, someone observed 100 fish jumping at mayflies!

The surface plants include water milfoil (*Myriophyllum spicatum*) which were probably brought in by water fowl. One commentator refers to an "underwater garden" with 12 species of plant. The lake is now teaming with insects and snails.

Drawing conclusions

We need to appreciate the distinct features of this event so we can expect variations from one volcanic region to another, but the principles seem to be general. For example, Surtsey, near Iceland (1963) showed a similar amazing, rapid recovery. The Krakatau Islands (1883) too recovered from its eruption. Nearer at hand, in the holiday destination of Lanzarote (1824), Timanfaya National Park seems very barren but there are 800 flora and fauna species!

How do we apply these findings to the post-Flood world? We first note the limitations of the Mount St. Helens experience to this event. The sediment after the Flood was ***more hospitable*** to recovery: it was water-borne and therefore more accessible to plant life and survival of the animal life.

But the Flood destruction was ***global*** and so there was a greater devastation of the Flood judgment with the extinction of air-breathing creatures. The "survivors" were limited to aquatic animals, seeds, insects, etc. (and there we can see useful data from Mount St. Helens). The emphasis in interpreting the post-Flood experience must be on the colonisers from the ark. The above events show how quickly the colonisers can affect revival.

Then we see parallel incidents. There is the ***rapid recovery*** itself. Initially the raven (which could live off carrion) after the Flood, then 10 months after the onset, the dove found food (Genesis 8:10-11). Second, the people and animals were told by God to *"multiply"* (Genesis 8:15-17). This has a parallel in the multiple elk births which took place during the post-eruption period. The rapid expansion of land animals is favoured if there is plenty of food, a lack of predation and free migration.

We also note that there was rapid natural speciation after the Flood. This has been observed in the post-Flood world (*e.g.* with the cichlid fishes) and favours the biblical account. There are two other factors: firstly, human interaction which can be positive or negative! But, above all, God's miraculous oversight and care.

As we observe the "new" Mount St. Helens we note that "the clues are there". ■

Could this be the death of Darwinism?

Sylvia Baker PhD, BSc, MSc

On Thursday 6 September 2012, *The Guardian* newspaper carried a dramatic headline on its front page, announcing that 'Breakthrough study overturns theory of "junk" DNA'. The story was carried by many newspapers and news bulletins and soon the blogosphere was buzzing with a mixture of excitement and consternation.

Many people, understandably, could not see what all the fuss was about, but for those who had been following the 'junk DNA' story this was a 'make or break' moment.

The cause of all the hoo-ha was an announcement made jointly by more than 400 scientists working in several different laboratories in different parts of the world.

They had reached the end of a major project, entitled ENCODE, initiated in 2003 and working fully since 2007. Their findings are summed up in 30 different academic papers published simultaneously in four different scientific journals, with the leading journal Nature carrying the main paper.

It is not often that such a major announcement is made by so many scientists working together; and these discoveries are regarded as comparable to the announcement regarding the Higgs Boson particle in their level of importance.

No junk

The central finding of the ENCODE project is that, effectively, all of our DNA – the genetic material that we carry in our cells – has a purposeful function.

The researchers have established this with certainty for 80 per cent of the genome and fully expect that, with more investigation, the remaining 20 per cent will be seen to be functioning as well.

To those of us who are used to thinking of the human body as fearfully and wonderfully designed by a Creator, this does not sound very surprising. Surely that was what they were expecting to find?

> "The imagined existence of 'junk DNA' has, for the past 40 years, been seen by many evolutionists as one of their strongest arguments against the view that living things are designed and created by God."

Regrettably, it was not. Until very recently, 98 per cent (yes, 98 per cent!) of the DNA was regarded as 'junk'; it was deemed to be useless DNA left over by millions of years of random evolutionary changes.

The imagined existence of 'junk DNA' has, for the past 40 years, been seen by many evolutionists as one of their strongest arguments against the view that living things are designed and created by God.

By the 1960s, it had been established that DNA was the biochemical substance which contained our genetic make-up and that it carried a code – the genetic code – which enabled the cells in our bodies to make the different proteins that we need in order to exist.

The idea was that each protein had its own gene and that was all there was to it. However, by the 1970s it was realised that not all of the genes coded for proteins. At that point, it was decided that the rest of the DNA, the non-protein-coding genes, were simply 'junk', rubbish that had accumulated during the process of evolution.

Eventually it was established that only about 2 per cent of the DNA coded for proteins. To the great majority of Darwinian evolutionists, 98 per cent was therefore junk.

There were always a few dissenting voices who argued that one day the functions of the remaining 98 per cent would be discovered. For decades, creationists have been making that point at every opportunity.

In more recent years, they have been joined in this by intelligent design advocates, culminating with the publication in 2011 of the book, *The Myth of Junk DNA,* by Jonathan Wells.

Growing doubts

By this time, early results from the ENCODE project were beginning to trickle out and it was becoming clear that there was evidence of function and purpose for at least some of the non-protein-coding DNA. Nevertheless, until 5 September 2012, it was still widely claimed that the majority of the DNA was junk.

Three important issues have been radically affected by the new discoveries. First, it can no longer be claimed that creationists and intelligent design advocates cannot make predictions and, therefore, cannot be regarded as doing ‘science’.

For decades, they have been predicting that if purpose was looked for in the ‘junk’ DNA, it would be found. This did not happen until the Human Genome Project demonstrated, in 2003, that there were only 20,000 protein-coding genes in the human genome, far fewer than had been expected.

At this point it was fully realised that it was necessary to look elsewhere to account for the complexity of human development and the ENCODE project began its work.

The second point follows from the first. It concerns the power of a scientist’s world view to affect how the evidence is being perceived. Creationists expected the DNA to be complex, to be performing vital functions that were not apparent at a first glance.

They urged the evolutionary scientists to think in terms of complex information and to look for it. Darwinian evolution requires the genetic apparatus to be simple. The more complex a structure is, the harder it is to account for how it will have arisen in the first place and the more likely it is that a random change in it will be harmful.

The Darwinian scientists who promoted the ‘junk DNA’ myth looked at the genome and thought they saw damaged, meaningless material. They were wearing the wrong spectacles. Once forced to look again at the ‘98 per cent’, this time expecting to find some function, it soon became apparent that it is there.

Compelling evidence

The third point is the most important of all. The ENCODE project has uncovered an unimaginable level of complexity, which is engendering a greater humility in at least some of those who work in genetics.

The Guardian article on 6 September carried an interview with Dr Ewan Birney, one of the leading ENCODE scientists. The article quotes him as saying that the decade since the publication of the first draft of the human genome has shown that genetics is more complicated than anyone could have predicted.

They then quote him directly: ‘We felt that maybe life was easier beforehand and more comfortable because we were just more ignorant. The major thing that’s happening is that we are losing some of our ignorance, and indeed it’s very complicated.

> “
>
> ”History taught Israel how to understand not only God’s sovereignty over nature but also more importantly the role that their historical heritage as a nation had destined them to play within God’s world.”

‘You’ve got to remember that these genomes make one of the most complicated things we know: ourselves. The idea that the [human genome] would be easy to understand is hubris. I still think that we are at the start of the journey, the warm-up, the first couple of miles of this marathon’.

The word ‘hubris’ is defined as ‘excessive pride or self-confidence’. This new generation of geneticists aspires to a greater humility. On the Nature web site can be found an open-access area dedicated to ENCODE, where they spell out what has been discovered and how they see the future of their project.

They are suggesting that it will be the end of this century before the human genome is fully understood, if indeed it ever can be, such is the complexity of what they have found.

Death blow

It is claimed that Darwinian evolution is supported by two main lines of evidence: the fossil evidence and genetic evidence. Of the two, the genetic evidence has been regarded by many as the more important.

In my view, the genetic evidence has just been demolished at a stroke, because it is now admitted that it is so little understood and what is now known is so difficult to reconcile with Darwinism.

No doubt, it will be a long time before the latter is fully admitted and in the meantime, behind the scenes, there will be frantic efforts to produce non-Darwinian theories of evolution. Nevertheless, as I see it, we are now witnessing the death of Darwinism. ■

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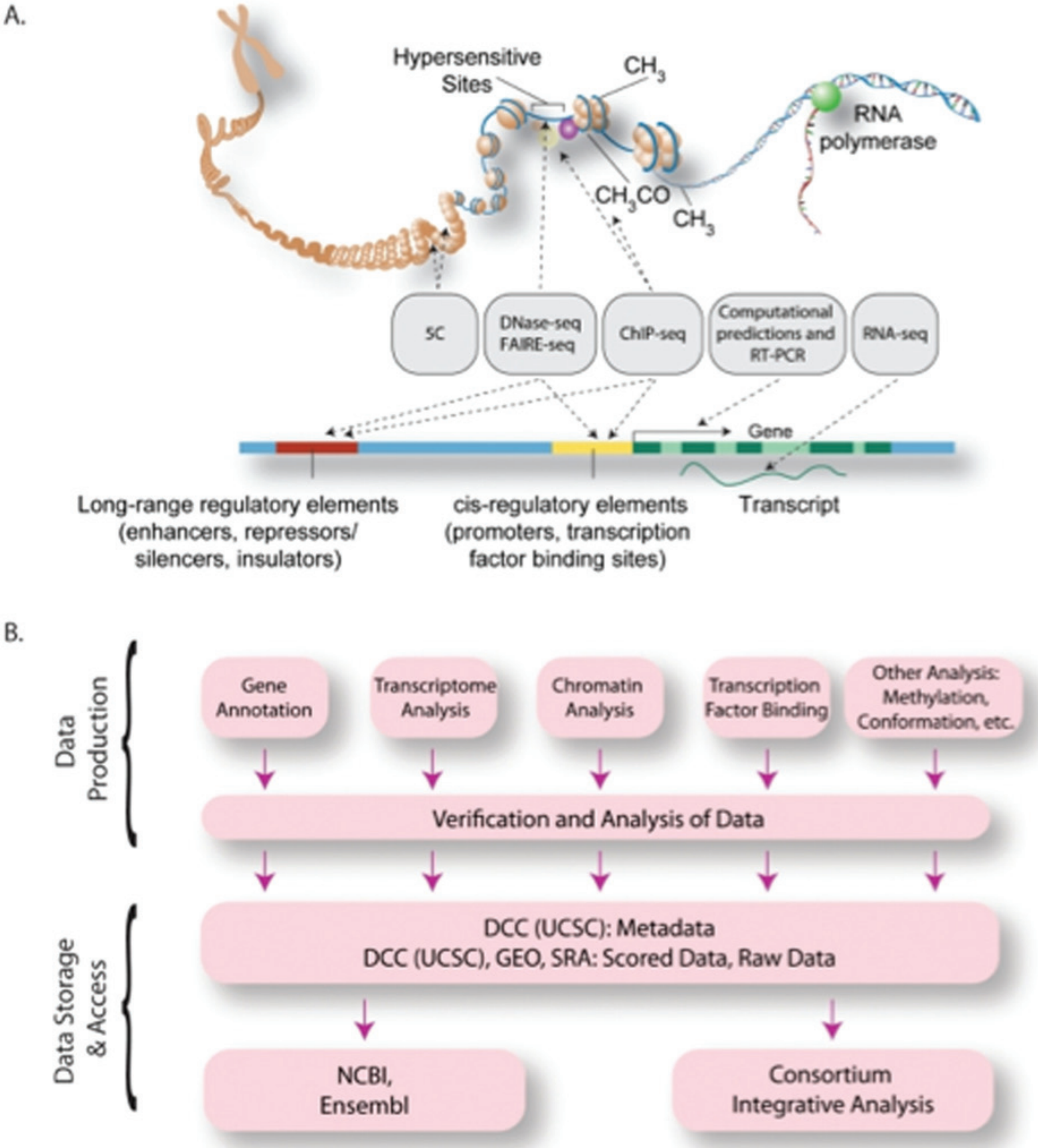
A.
Hypersensitive Sites
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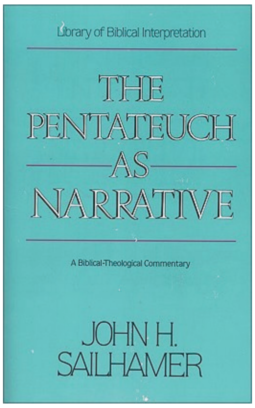
RNA polymerase
CH_3CO
CH_3
5C
DNase-seq FAIRE-seq
ChIP-seq
Computational predictions and RT-PCR
RNA-seq
Gene
Long-range regulatory elements (enhancers, repressors/ silencers, insulators)
cis-regulatory elements (promoters, transcription factor binding sites)
Transcript
B.
Data Production
Gene Annotation
Transcriptome Analysis
Chromatin Analysis
Transcription Factor Binding
Other Analysis: Methylation, Conformation, etc.
Verification and Analysis of Data
Data Storage & Access
DCC (UCSC): Metadata
DCC (UCSC), GEO, SRA: Scored Data, Raw Data
NCBI, Ensembl
Consortium Integrative Analysis

Diagram showing a variety of assays and methods employed to identify functional elements by ENCODE investigators.

Book Review
The Pentateuch as Narrative:
A Biblical-Theological Commentary
(Library of Biblical Interpretation Series)

John H. Sailhamer
Zondervan Publishing House, Grand Rapids, Michigan, 1992. 522 pp.
ISBN 0-310-57421-8 **£15.50**

Reviewed by David Anderson


Library of Biblical Interpretation
THE PENTATEUCH AS NARRATIVE
A Biblical-Theological Commentary
JOHN H. SAILHAMER

John Sailhamer is an engaging conservative evangelical scholar who has been teaching and researching in the Old Testament for over three decades, and is presently resident at Golden Gate Baptist Seminary in California. He has other books which address questions of creation more directly; but this is the work that came my way in Kenya's Rift Valley.

Sailhamer's main aim is to show the "strategy" of the writer of the Pentateuch. The Pentateuch is basically a story (not in the modern sense of "made-up tale", but rather of a historical account re-told for a present purpose). It only rarely provides direct editorial comment to explain why a certain event, person or other detail is being focussed upon. Sailhamer asserts that the writer expects us to read and re-read it, each time getting a deeper appreciation of his overall purpose.

Who was the Pentateuch written for? First in time, it was written for Israel as they entered into the conquest of the land. It finishes on a climax: God has delivered his people, but not yet fulfilled all his promises to them. The first generation of readers stood at a crucial point in history. They needed to here this re-capitulation of their past so that they might go forward with faith in their God.

In the modern West, individualism and the "hear-and-now" of rolling news and instant technology seem to be contributing to robbing Christians of their appreciation of "story". People have an idea of their own "personal journey", but this is a poor substitute. The Bible places us as part of a story. God made a "very good" creation in which man was given a large and glorious calling to "fill and subdue" but failed through sin. The story though is guaranteed a terrific ending, because the "last Adam" (1 Corinthians 15:45) will do what the first could not. Through his death and resurrection and the outpouring of the Spirit, Jesus will ensure that the creation's original goals are achieved. This success is not independent of our lives; but rather, just as Adam was to lead and teach his family into fulfilling the original covenant, so now Jesus is to fulfil his purposes through the lives of his redeemed people. Our actions either carry forward or hinder the story – how we live matters!

Sailhamer does not aim, in this book, to go beyond the situation of that first generation. He does, however, argue persuasively that the author deliberately and repeatedly indicates to the reader that a new and better covenant than that given at Sinai was needed. He shows, rightly in my view, that right from the beginning the Sinai covenant was portrayed as insufficient to enable Israel to fulfil its calling. It was to be a light to the nations, to bring restoration after Adam and Noah and sons' failures; but lacked the circumcised heart needed to do so.

The issues that arise in a book of this scope with an original author are legion. From a creationist point of view, the most controversial feature is Sailhamer's arguments that 1) The garden of Eden was the same territory as land of Canaan and 2) This is the territory whose creation, or rather organisation, is described in Genesis chapter 1 from verse 2 onwards. From this it then follows that this is the territory under consideration during the flood. This book was published in 1992 and there is little evidence that Sailhamer's view has been gaining popularity. The arguments are mainly based upon tracing out thematic parallels. In my opinion, our age lacks a great deal of sanctified imagination which is needed when tracing the echoes and hints in Biblical narratives – the Bible is, after all, a very colourful book, not a technical manual of philosophical ideas. Sailhamer is skilful in showing where Moses is telling us that God was working towards "Paradise restored".

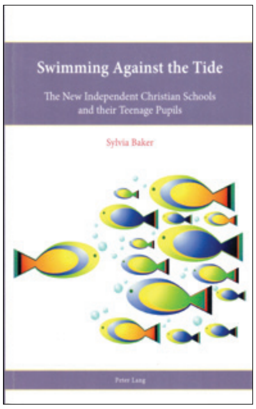
However, I think that Sailhamer makes a basic logical fallacy by leaping from thematic parallels into objective identification. He himself later points out how the account of the building of the tabernacle has powerful parallels with the Genesis creation account. It never crosses his mind to then jump into suggesting that the tabernacle actually was that which was created in Genesis 1, or *equalled* the Garden of Eden, etcetera.

There is a lot to inform and challenge in these pages. Because it covers the whole Pentateuch, detailed argument is rarely present. Often I was left thinking that the author was being too clever for his own good and could have found simpler though less spectacular solutions to the questions the text was raising. The main value of this book for creationists as such would be to stretch and challenge us beyond providing simplistic answers to legitimate questions about the multi-dimensional Genesis text. I believe that the creationist position is more than capable of meeting the challenges; our main danger is if we reflect our opponents' caricature of providing unsophisticated readings. The writer of the Pentateuch employed a nuanced set of strategies in laying out his case for Israel to live by faith, and the more "in-tune" we get with all these varieties of subtle messages, the better it will be for presenting a convincing case for Biblical creationism and its cosmic implications.

Book Review
Swimming Against the Tide
The New Independent Christian Schools and Their Teenage Pupils

Sylvia Baker
Peter Lang AG, 2013. 259 pp.
ISBN 978-3034309424 **£42.00**

Reviewed by Arthur Jones



Faith schools (schools of a 'religious nature') are a matter of very great controversy today. Many politicians and many of our cultural elite believe that they shouldn't exist, especially if they are 'Evangelical' [or 'Muslim', but that isn't under scrutiny here]. Such schools are regarded as a barrier to social cohesion, as discriminatory, indoctrinatory and divisive. It is taken for granted that they cannot prepare pupils for responsible citizenship in a culturally and religiously diverse society. Some critics go even further, asserting that such schools produce 'brainwashed, bigoted, anti-science reactionary young adults who would be better placed in the seventeenth century' (p. 1). What is remarkable is not so much these accusations, as the almost complete lack of hard empirical evidence for them. In an age where rational autonomy is lauded as a prime goal in education and, on every hand, we hear appeals for 'evidence-based' decision-making, this is very remarkable indeed.

Dr Baker's book is very significant and important, precisely because it provides a wealth of empirical evidence. Sadly, the *Theos* report (2013), *More than an Educated Guess: Assessing the Evidence on Faith Schools* (http://www.theosthinktank.co.uk/publications/2013/10/02/more-than-an-educated-guess-assessing-the-evidence-on-faith-schools) chose to focus only on state-funded schools and so couldn't consider the evidence provided by Dr Baker.

Dr Baker begins (pp 5-6) with the necessary caveat that 'those involved in the new Christian schools would argue that all schools are in a sense religious, that there is no such thing as religious neutrality.' With that clarification she then, for convenience, refers to all schools which are consciously religious as 'faith-based schools'.

The book provides an in-depth investigation of a recently established network of small independent Christian schools. Chapter 1 examines the controversy itself and in particular the arguments for and against faith schools in the UK. She asks the critical question (p. 11), also raised by some secularists, as to whether those children who are only exposed to secular perspectives in school are in fact the ones being indoctrinated and who are the ones who are less prepared for life in a religiously plural society.

In chapters 2-4 she introduces the schools themselves and describes the key issues in some detail. In chapter 2 she also considers the failure of the new Christian schools movement to achieve any substantial growth. She suggests that a key factor is the absence from churches of young families of the age of those who originally started the schools. I would suggest that a closely related factor is the general lack of understanding and support from church leaders.

Chapter 3 considers the motivation behind the founding of the schools. She concludes that they were founded because church leaders and parents believed that their children should be educated within a Christian framework (worldview) and that most other schools were educating pupils into becoming unbelievers. Sadly the statistics bear this out. On average, only about half the children with Christian parents will be Christians by the time they leave school and of those who go on to college or university as active Christians, 60-80% will no longer be active by the time they finish their courses.

Chapter 4 concludes that in the present political and legal climate, the future of these schools is uncertain. Which only makes it more urgent to investigate their influence – for good or ill – while they still exist.

In chapters 5-11, the focus shifts to the teenage pupils. The responses of the teenagers to an extensive survey are analysed and, where possible, comparisons are made with the attitudes and beliefs of the wider population of British teenagers. The findings show that the young people in the new Christian schools hold different values from many of their peers, and it is argued that the differences are predominantly of a positive rather than a negative nature. Many of the findings were, perhaps, unexpected in the light of general societal trends, but very encouraging for the Christian parents.

High levels of traditional Christian belief were maintained throughout the teenage years and there was no significant difference between boys and girls (Ch. 6).

Similarly, high levels of belief in creationism were maintained with again no difference between boys and girls (Ch. 7). Attitudes to science were not specifically addressed, but there was no indication of anti-science attitudes, nor of poorer results in science GCSEs.

The young people showed evidence of considerable well-being, having a strong sense of purpose in life, and generally not being prone to depression. They are not however 'ghetto-ised': about half socialise mainly with those who are not religious (Ch. 8).

A substantial majority of the pupils have a positive view of their 'unusual' education (Ch. 9).

The majority espouse a traditional Christian morality, even when that is now at odds with political correctness (Ch. 10). They were concerned for others, including those in less fortunate nations. However there are many topics to be considered here and more research is needed for a clearer and more detailed picture.

On average there were around 11% of pupils in the schools who are not religious and who espouse the views and attitudes of the wider culture (Ch. 11) Despite this the survey produced no evidence that they would be happier or more likely to prosper in a secular school. This is another area where more research is needed, particularly comparing the experience of school life for the minority of secular pupils in Christian schools with the minority of Christian pupils in secular schools.

There are wider implications of the findings of the research reported in this book (Ch. 12). It appears that the schools are succeeding, where all other contexts have failed, to eliminate whatever factors are normally causing boys to be less religious than girls and older teenagers to be less religious than those who are younger. The results also support the claim of the schools that it is the presence of a coherent basis for education and of a consistent worldview that makes sense of life that accounts for the educational success of the schools and the well-being of their pupils.

My only disappointment with the book, is that I would really like to have some evidence of the impact that the graduates of the schools are having in later life. Are they having a Christian influence in their private and public worlds: in their homes and communities, but also in their workplaces and professions? Are they playing a part in transforming the culture? Obviously this survey cannot answer these questions: we need the kind of longitudinal research that, say, Glen Elder carried out on the influence of the Depression experience on family functioning and child development in the United States. The data covered an amazing forty year period. We are unlikely to ever have such a luxury in UK research. In the present, Sylvia Baker's book represents an enormous step forward. I highly recommend it to all concerned parents and church leaders. Given the outrageous price, maybe churches should consider buying a copy or two to loan? ■

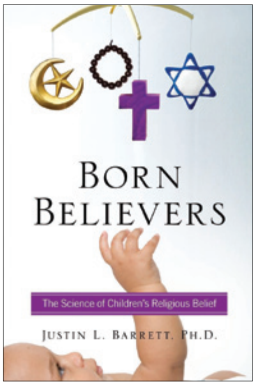
***Arthur Jones** has spent some 30 years teaching in schools and some 18 years running undergraduate and postgraduate Christian worldview courses. His PhD thesis was a critical study of theories of origins in biology and his MEd was a defence of religious schools and colleges. Some of his work is freely available online at www.allofliferedeemed.co.uk/jones.htm*

Book Review
Born Believers

The science of children's religious belief

Justin L. Barrett
Free Press, 2012. Hardback.
ISBN 978-1-4391-9654-0 **£15.50**

Reviewed by Hans Degens



"What is the chief end of man?" is the question that begins the Westminster Shorter Catechism and the answer is unequivocal: "Man's chief end is to glorify God and to enjoy him forever." In other words, humans exist for a purpose and that purpose is to know and love God, both now and for eternity. That being the case, it would be very surprising if humans were not born with an innate knowledge that God exists and that he is potentially very important in their lives. Biblical creationists would therefore predict that newborn and very young babies, if only we could access their thoughts and feelings, would prove to be "born believers". Justin Barrett and his colleagues claim to have shown just that.

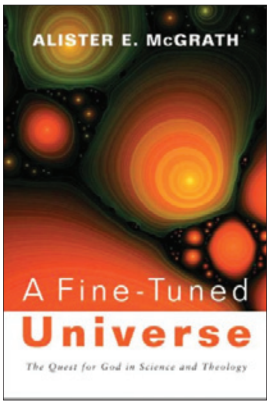
When this book was first published in 2012, the evidence it contained was considered so compelling that the *New Scientist* devoted considerable space to it in their 17 March edition. Justin Barrett was quoted as saying, "Like it or not, religious belief is ingrained into human nature. … Whatever some people say, children do not need to be indoctrinated to believe in god. They naturally gravitate towards the idea". These findings have enormous implications. In recent years the British Humanist Association, together with others, has mounted a very successful campaign to have the theory of Darwinian evolution heavily promoted in schools to very young children. Clearly, they wish to promote an atheistic view of origins. Justin Barrett demonstrates that atheism is unusual and, he would say (p. 202), "unnatural". He describes (p. 4) how, "evidence exists that children might find especially natural the idea of a nonhuman creator of the natural world, possessing superpower, super-knowledge and super-perception and being immortal and morally good". He goes on to describe how many atheist parents have told him how difficult it is to convince their young children that God does not exist.

These are important matters. Who is doing the indoctrinating of young children in today's western society and who is going with the flow of their natural predisposition? As one who has taught young children in an independent Christian school, I can testify that no hard-line tactics are needed to persuade them, for example, that a beautiful Creator lies behind a beautiful creation. Generally speaking, however young they are, they know it already. How tragic then, that these natural beliefs are quite deliberately being knocked out of so many of them. This book deserves to be read and widely quoted. ■

Book Review
A Fine-Tuned Universe
The Quest for God in Science and Theology

Alister E. McGrath
John Knox Press, Westminster, 2009. 262 pp.
ISBN 978-0-664-23310-5 **£26.99**

Reviewed by Rev. Bill James



This book is divided into two parts. In the first half McGrath presents his understanding of natural theology, before going on in the second half to reflect on the fine-tuning of the universe from a Christian point of view.

Many of us are familiar with the view of natural theology, i.e.. we can learn something about God from the Universe He has made. We might think for example of the work of William Paley, who saw clear evidence of design in human anatomy and natural history and portrayed God as the divine watchmaker –forming the universe by act of special creation.

McGrath challenges this traditional approach of seeking to prove the existence of God from our understanding of purpose or design. He claims that Paley's natural theology is now discredited since the emergence of Darwin's theory of evolution. We now need to be suspicious of any claims that the appearance of design necessarily points towards a Creator. It is just as possible to look at the world, with Dawkins for example, and see mechanisms which point to the absence of a Creator.

Therefore, it is argued, a more radical approach is required. Whereas the thinking of the Enlightenment (and modernism) maintains that "Nature" is an objective reality leading us to objective conclusions, now we understand (in our postmodern world) that our view of Nature is actually an interpretation based on our viewpoint. Natural theology is therefore looking at the world with the presuppositions of Christian belief, and seeing meaning and purpose which are consonant with faith. It is when we look through the lens of faith in God, specifically a Trinitarian God, that we make most sense of the natural world. We find that our worldview fits our experience like a foot in a comfortable shoe.

In the second part of the book, McGrath considers the astonishing fine-tuning evident in the Universe. Here, his remit includes cosmology, the peculiar chemistry of water, mechanisms for the emergence of life, and the mechanisms of evolution which seem to be directional giving rise to increasing numbers and complexities of organisms. It is then argued that all of this makes eminent sense from the framework of Christian theology. Charles Kingsley is quoted approvingly: "We knew of old that God was so wise that He could make all things: but behold He is so much wiser than even that, that He can make all things make themselves." Hence a glorious vision of God who is both Creator and Sustainer is consonant with a complex and evolving world. Augustine's view of God creating the world in a moment, embedded with causalities which could emerge or evolve at a later stage, is referred to with enthusiasm.

The fine-tuning of the universe is compared to a string of pearls: the anthropic phenomena are the pearls, and the string is the Trinitarian vision of reality. McGrath wants to flee from both "theist enthusiasts" who see fine tuning as evidence for the existence of God, and atheists who take refuge in the notion of a multiverse.

This is a stimulating volume, worthy of careful reading. There are one or two observations which might be made. McGrath seems to dispense too quickly with traditional views of natural theology. He is right of course that learning of God from the natural world can lead to distorted views such as Deism; the Bible does not suggest that general revelation provides the whole truth. Nevertheless it does provide important truth, and sufficient truth for us to be rendered "without excuse" (Ro.1:19-20). Surely that text should alert us to the fact that as sinners we all naturally view the world in a morally blinkered way, with an inbuilt hostility to our Creator. So it is surprising that in a book which is described first of all as a "Quest for God" the great certainty upon which much else is built is the fruit of modern scientific inferences, and in particular the theory of evolution. Might a little caution, even humility be more appropriate here? Might it be possible, or even probable, that the development of the theory of evolution has not been through entirely objective observation and assessment of the natural world, but rather coloured in some sense by the presuppositions of its proponents?

McGrath is critical of traditional natural theology not least because it assumes that we can learn of God apart from special revelation. Yet if we maintain the priority of God's revelation of Himself in Scripture, we should surely look at the natural world through the spectacles of Scriptural truth –particularly when it speaks of how He summoned the world into existence, how humanity came into being and how sin entered the world. Rather it appears in this volume as if the "facts" of evolutionary science must be accepted as ultimate meta-narrative, and that theology is the fitting of our knowledge of God into that framework. ■

Editorial: Continued.

In between the Fall and the return of Christ, which will bring in the new creation, we have the present. This is the period we often refer to as "earth history". It is the period of "frustration" according to Scripture.

There are two consequences of this for our ministry. One is that the created harmony and the new creation are not available for scientific research and explanation. We can only explore the fallen world by science. The present is not the key to the past, that is, the origins of the universe, life, *etc.* These we take by faith from Scripture. These are the events of which only God is a witness and His testimony is true.

The second consequence is that I believe, therefore, that Genesis 1-2 is sacrosanct and not to be discarded under any literary or scientific pretence. The "days" of Genesis 1 are non-negotiable. Everything we experience is between these first two and last two chapters of Scripture.

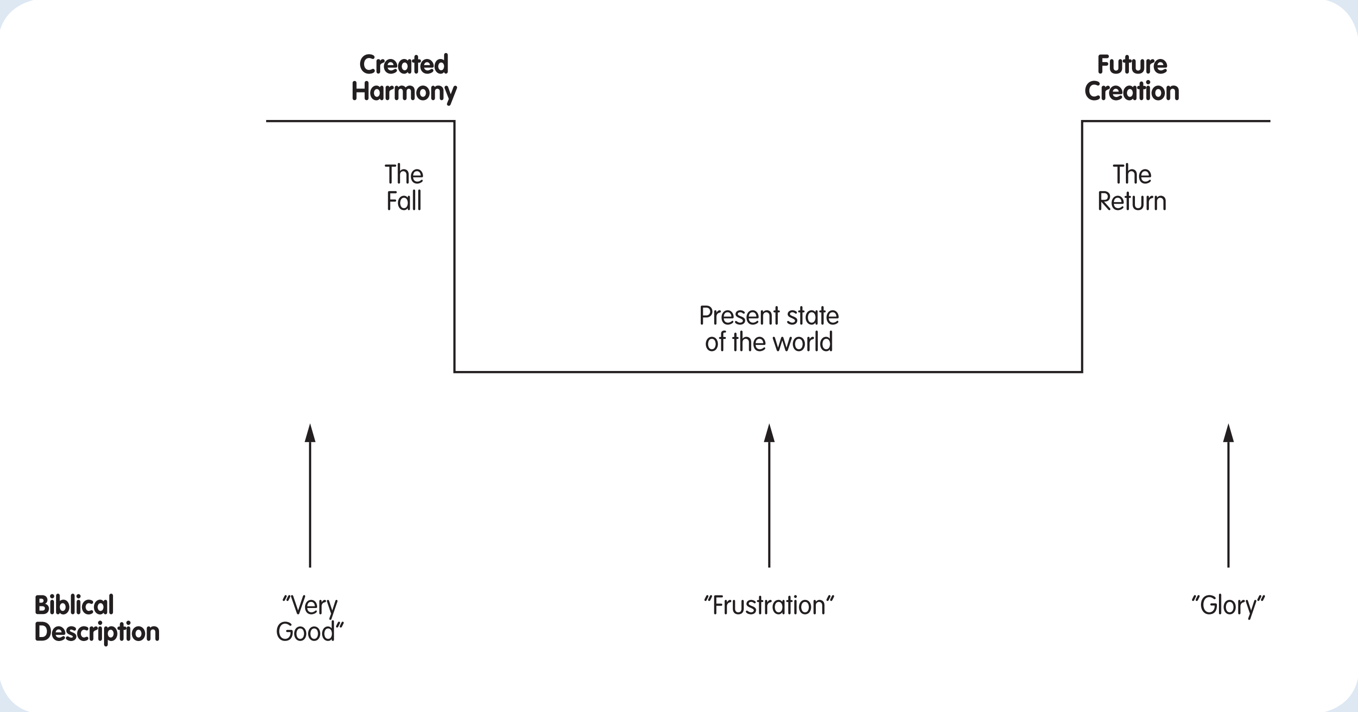
One interesting aspect of our work that I have found increasingly significant is in the argument we present from design. This is something we have talked about for several decades. Now it has been taken up very effectively by a non-creationist movement, the Intelligent Design Approach. We are grateful for their powerful input. Many of us are hesitant about their approach because it is not biblically based and, therefore, ignores the effect of God's judgment on His rebellious creation. But it is worth keeping an eye on their material.

An interesting aspect of the design approach is that we have tended to argue for design in specific organs or in specific aspects of humans and animals. Yet it is apparent that the *whole* creature is designed and has to be "intact" from the beginning. Take the contrast between the chimp and man. If the evolutionary approach is right, then the chimp has to stand erect in the human sense. But that entails changes throughout the body. The feet are changed and the hands are changed. (Stuart Burgess develops this in his article in this issue of *Origins*.) The knees change and the relative sizes of the arms and legs change. The pelvic structure changes to adjust the centre of gravity. The spine has to be changed and the connection between the spine and the head has to be realigned for the chimp's head to rotate through 90°. Then the chin and nose have to change and so on. There will be accompanying changes in the brain. But, let us not forget, as the evolutionists do, that these are not "just chance processes". Failure at any point would be disadvantageous. And, of course, the changes would require a reprogramming of the DNA – and that across the chromosomes!

The evolutionary failure here is noticeable when we see how they flounder in finding "missing links". The classic must be the many attempts to identify the link between fish and amphibia. We keep seeing new proposals for that link. But what do they look at? Simply fins that may become elementary legs! We also see how each case has to be abandoned as a false lead. But, what about the other changes? The respiratory system, the digestive system, the blood system, the skin and so on. How unscientific are the approaches of those who claim we are unscientific!

Going back to specifics, we often discuss the Flood in the days of Noah. There are many aspects to this, for example. There is the underlying spiritual message and there are the issues about the physical cause of the Flood. Stephen Lloyd writes on the spiritual aspects in this journal.

On another aspect of the Flood, the editors have kindly printed my article in this issue on the recovery of the environment around Mount St Helens. David Tyler similarly looked at Surtsey some years ago. These modern examples have a lot to teach us about how the



World history from a biblical perspective.

Editorial: Continued.

world recovered from the Flood and may offer significant clues to our interpretation of the geological record. But, going back to the Bible description, how often do we consider the post-Flood events? In the June issue of *Evangelicals Now,* pastor David Skull has an important article on Genesis 9:18-28, with clear modern day implications. Again I would argue that we should keep focussed on the whole biblical record – which is what the New Testament does.

In a time when we find our supposed evangelical friends will not stand with us on the biblical issues, we are grateful for papers like *Evangelicals Now* and *Evangelical Times* together with a few magazines who have a clear editorial policy of standing by the biblical account of creation. We thank them.

Finally we need to continue to emphasise that good science is approached in a critical way. We get results from our experiments and propose mechanisms, theories, *etc.* We then test to see if there are alternative explanations. Why is it wrong then to challenge the evolutionary approach? Even the atheist and evolutionist, Steven J Gould got into hot water for challenging Darwinism! Yet Her Majesty's Government is increasingly antagonistic to such an approach. The battle is not won and will not be until our Lord and Saviour returns. But we are called to put on the spiritual armour and fight the good fight.

J H John Peet

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